

C-more Touch Panels

Section 10



C-more Micro Touch Panels

Section 11



Optimates, DV-1000, LookoutDirect, and Industrial Monitors

Section 12

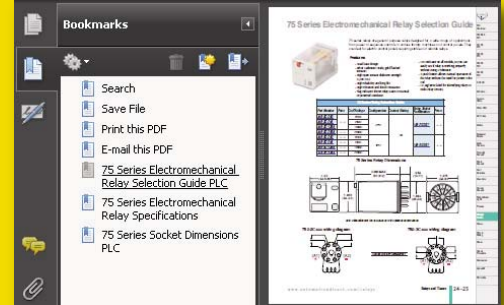


Atlas Industrial Monitors

Section 12



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- Use bookmarks to save, search, print or e-mail the catalog section
- Click on part #s to link to directly to our online store for current pricing, specs, stocking information and more

OptiMate Panels Overview



OP-400 Series



OP-600 Series



OP-1000 Series

Overview

Our OptiMate line offers another option for operator interface users. The units offer many features at a low cost.

You can connect the panels to your application by using the configuration software and ladder logic in your program.

Compatibility

OP-400 series, OP-600 series and OP-1000 series panels all work with DL05, DL06, DL105, DL205, DL305, DL405, Allen-Bradley SLC 5/03, 5/04, 5/05 and MicroLogix 1000/1200/1500 PLCs.

OP-1000 series panels and the OP-9001 also work with GE Fanuc Series 90 Micro, GE 90/30 Series (SNP) and Modbus RTU PLCs.

All panels require setup using our OP-WINEDIT configuration software. Simply choose the proper cable and particular type of CPU in our configuration software.

A single OP-400 series panel can be used with one CPU port, while single or multiple (up to 31 panels using an OP-9001 communications panel) OP-600 and OP-1000 series panels can be used with one CPU port.

Choosing the right panel

The following pages show a quick summary of our OptiMate operator interface panels and the key features associated with them. Here are a few helpful hints to consider as you're reviewing the features:

Do you need just a simple message display? If so, look at the OP-420, OP-440, OP-620 or OP-640.

Do you need pushbuttons or panel lamps without message capability? Then look at the OP-406, OP-609, OP-613, OP-1124(-1), OP-1224 or OP-1212.

Do you need a simple setpoint panel? If so, check out the OP-413, OP-414, OP-613, or OP-1312.

Do you need programmable function keys and a display? Then look at the OP-420, OP-620, OP-640, OP-1500 or OP-1510.

OptiMate Panels Specifications

OptiMate Panel Specifications				
Specifications	OP-400 Series	OP-600 Series	OP-1000 Series	OP-9001
Units per CPU	One per port	1 or multiple (up to 31 with OP-9001)	1 or multiple (up to 31 with OP-9001)	One per port
Service Power (Input)	5VDC	8-30VDC		8-30VDC
Power Consumption	OP-406 0.25W @ 5VDC OP-413 0.80W @ 5VDC OP-414 0.85W @ 5VDC OP-420 0.58W @ 5VDC OP-440 0.75W @ 5VDC	OP-609 2.4W @ 8-30VDC OP-613 3 W @ 8-30VDC	OP-1124 10W @ 8-30VDC OP-1212 7W @ 8-30VDC OP-1224 4W @ 8-30VDC	3.85W @ 8-30VDC
In-Rush Current	.35-.44A for 1ms	1.5-2.0A for 2ms max.		n/a
Serial Communication	PLC port RS-232 RJ12	PLC Port RS-232/422 15 pin D-sub (female)		One-RS-232/422 to PLC Two-RS-422 to OP panels (3 DB15 female)
Max. Cable Length	RS-232: 50ft	RS-232: 50ft RS-422/OP-9001: 4000ft		4000ft. shielded cable 30ft. ribbon cable
Configuration Software	OP-WINEDIT			
Environmental Specifications				
Enclosure	NEMA 4			
Agency Approval	UL (file #G182843), CUL, CE			
Operating Temperature	32 to 122°F (0 to 50°C)			
Storage Temperature	-4 to 158°F (-20 to 70°C)			
Humidity	10-95% R.H. (non-condensing)			

Company Info.

PLCs

Field I/O

Software

C-more & other HMI

AC Drives

AC Motors

Power Transmiss.

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temp. Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

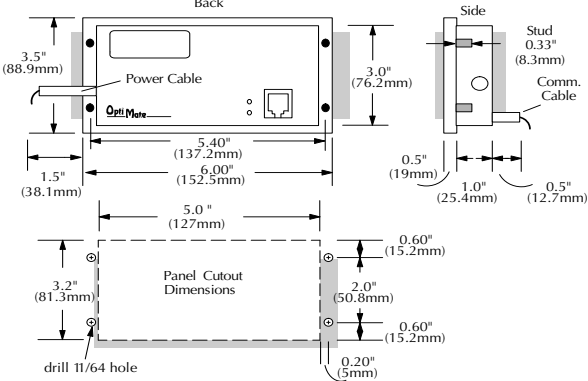
Enclosures

Tools

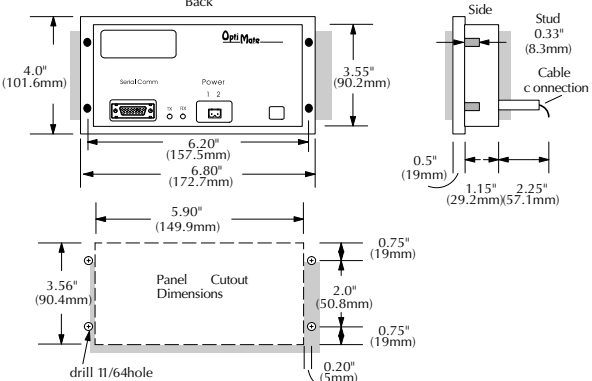
Appendix

Part Index

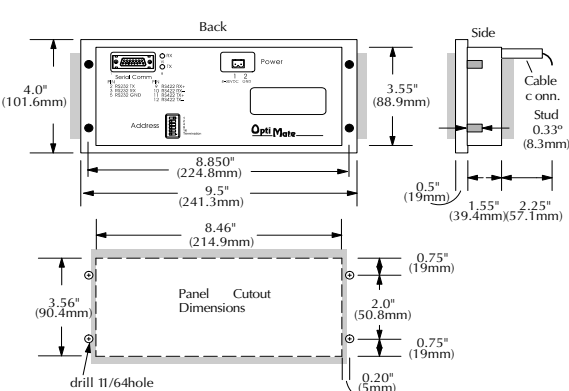
OP-400 Series



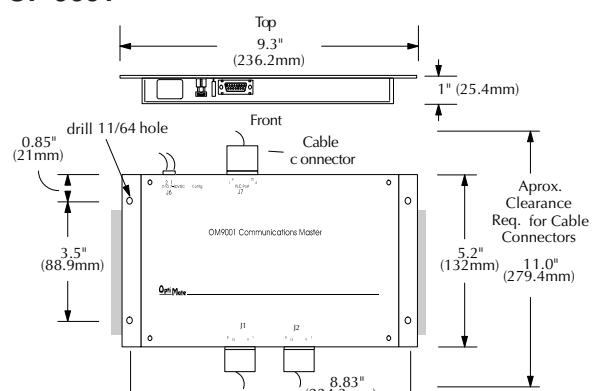
OP-600 Series



OP-1000 Series



OP-9001



OptiMate 400/600 Series

OP-406 <--->

Indicator/pushbutton panel

- Four User-defined function keys with LED indicators
- Six LED annunciator lamps



OP-413 <--->

Setpoint/display panel

- Read/write six PLC data registers with a bank of data locations
- Four-digit numeric display
- Make setpoint adjustments by using select button and arrows to change values



OP-414 <--->

Setpoint/display panel

- Read/write six PLC data registers with a bank of data locations
- Eight-digit numeric display, allows BCD double operations
- Make setpoint adjustments by using select button and arrows to change values



OP-420 <--->

Operator panel

- 2x20 character LCD display
- Four function keys with LEDs
- Display up to 160 pre-defined messages which reside in the panel's memory



OP-440 <--->

4-line display panel

- 4x20 character LCD display with the ability to display text, BCD double, binary and floating-point numbers
- Display up to 160 predefined messages which reside in the panel's memory



OP-PS400 <--->

Power Supply

- External 5 VDC power supply for OP-400 series panels
- Plugs into standard 120 VAC receptacle

OP-609 <--->

Combination panel

- Nine user-defined function keys with LED indicators
- Six LED annunciator lamps



OP-613 <--->

Setpoint/display panel

- Read/write 4 PLC data registers with a bank of data locations
- Four-digit numeric display
- Make setpoint adjustments by using select button and arrows to change values
- Four user-defined function keys with LED indicators
- Two LED annunciator lamps



OP-620 <--->

Operator panel

- 2x20 character LCD display
- Five function keys with LED indicators
- Five control keys with menu tree capability
- Display up to 160 pre-defined messages which reside in panel's memory



OP-640 <--->

4-Line display panel

- 4x20 character LCD display with the ability to display text, BCD double, binary and floating point numbers
- Five function keys
- Three LED annunciator lamps
- Display up to 160 predefined messages, which reside in panel memory



Note: OP-PS400 is required for panel configuration and operation of all OP-400 series panels. Do not power from PLC communications port.

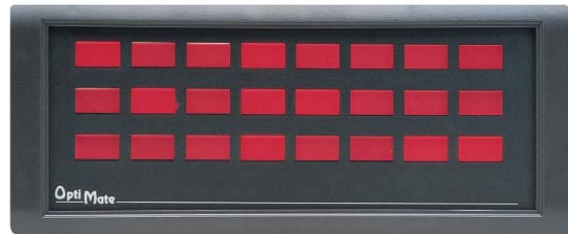
OptiMate 1000 Series

OP-1124



Annunciator panel

- 24 high-intensity LED annunciator lamps
- Interchangeable colors (red, green, yellow)
- Create custom labels
- OP-1124-1 for <---> comes with one row each of red, yellow and green light bars already installed

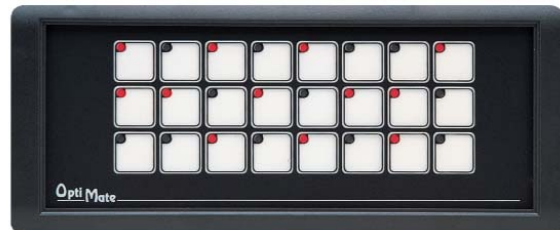


OP-1224



Pushbutton panel

- 24 individual pushbuttons with LED indicators
- Create custom labels



OP-1212



Combination panel

- 12 high-intensity LED annunciator lamps
- Interchangeable colors (red, green, yellow)
- 12 pushbuttons with LED indicators
- Create custom labels



OP-1312



Setpoint/display panel

- Read/Write 12 PLC data registers with 3 banks of four data locations, each with a 4-digit display
- Create custom labels
- Three control keys for each bank of data locations
- Make setpoint changes using the arrow control keys



OP-1500/OP-1510



Operator panel

- 2x20 character LCD display
- Full numeric keypad
- Five function keys with LED status (OP-1510 uses 3 for menu functions)
- Three LED annunciator lamps
- Build and store up to 160 messages in the unit
- Menu capability (OP-1510)



OptiMate Accessories

OP-9001



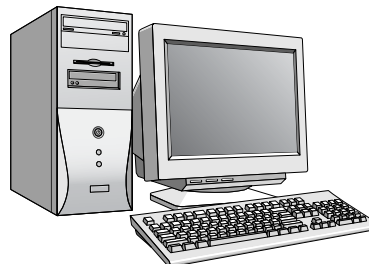
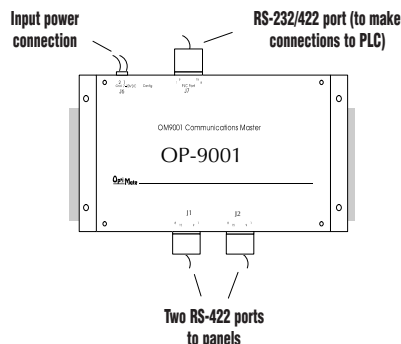
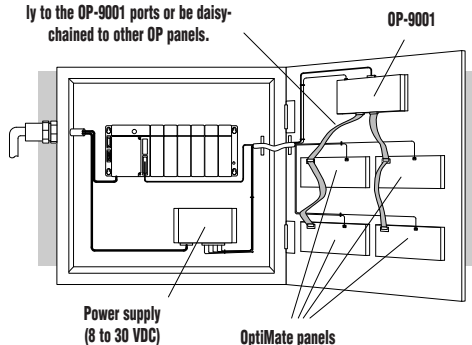
Communications master

The OP-9001 is a communication master unit for connecting two or more (up to 31) OP-600 and OP-1000 series OptiMate panels to a single CPU communications port. It connects to any **Direct**LOGIC, Allen-Bradley 5/03, 5/04, GE Series 90/30, GE Series 90 Micro, and Modicon (Modbus RTU) CPU.

Note: The OP-9001 cannot be used with OP400 series panels.

The adjacent figure is a typical multi-drop arrangement using an OP-9001 connected to four OptiMate Panels. The OP-9001 is surface-mounted to the cabinet. Notice the adequate space available to route cables and allow for proper clearance. All the panels are configured using OP-WINEDIT software.

Ribbon cable with DB15 male connectors attached. Panels can be connected directly to the OP-9001 ports or be daisy-chained to other OP panels.



OP-WINEDIT



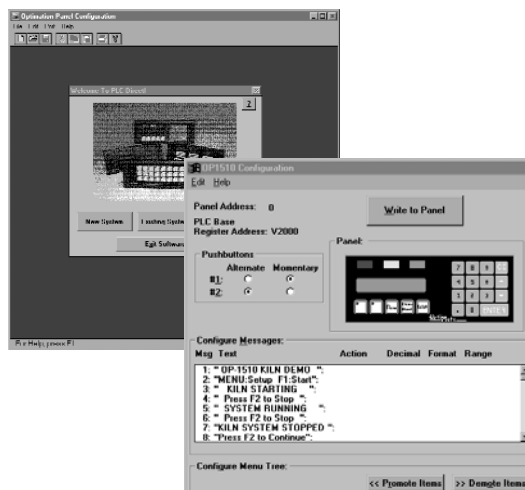
Configuration software

All of the OptiMate panels (including the OP-9001 communication master) are configured using the OptiMate OP-WINEDIT configuration software.

OP-WINEDIT software is compatible with computers running Windows 95/98/2000/NT/XP.

Simply load the software onto your personal computer. The simple setup instructions are described in the supplied manual and in the built-in HELP screens. The software allows setup of your complete panel applications, including the type of PLC being used, communications protocol, type of panel (or panels) being used, and in some cases, the format of the message text for the LCD display. Some panels even include the ability to design a menu tree. The setup steps are similar for all OptiMate panels. Use cable OP-CCBL to connect a PC to OP-400 series panels, or OP-ACBL-1 to connect to OP-600 or OP-1000.

Note: When using the OptiMate 600 series panels (except for the OP-640), OP-WINEDIT software version 2.0 or later is required. When using the OptiMate 400 series panels or the OP-640, version 2.3 or later is required.



OptiMate Cables

Company Info.

PLCs

Field I/O

Software

C-more & other HMI

AC Drives

AC Motors

Power Transmiss.

Steppers/ Servos

Motor Controls

Proximity Sensors

Photo Sensors

Limit Switches

Encoders

Current Sensors

Pressure Sensors

Temp. Sensors

Pushbuttons/ Lights

Process

Relays/ Timers

Comm.

Terminal Blocks & Wiring

Power

Circuit Protection

Enclosures

Tools

Appendix

Part Index

Cables for OptiMate Panel-to-PLC Connection				
PLC Family	CPU (or other device)	CPU Port	Cables for 600/1000 Series	Cables for 400 Series
DirectLOGIC™ DL05	DL05: D0-05	Port 1	OP-2CBL	OP-2CBL-2
		Port 2	OP-2CBL	OP-2CBL-2
DirectLOGIC™ DL06	DL06: D0-06	Port 1	OP-2CBL	OP-2CBL-2
		Port 2	OP-2CBL-1	not available***
DirectLOGIC™ DL105	DL105: F1-130	Only one	OP-2CBL	OP-2CBL-2
DirectLOGIC™ DL205	D2-230	Only one	OP-2CBL	OP-2CBL-2
	D2-240	Top port	OP-2CBL	OP-2CBL-2
		Bottom port	OP-2CBL	OP-2CBL-2
	D2-250-1	Top port	OP-2CBL	OP-2CBL-2
	D2-260	Bottom port	OP-2CBL-1	not available***
DirectLOGIC™ DL305	D2-DCM (module)	Only one	OP-4CBL-2	not available***
	D3-330	Requires DCU*	OP-4CBL-2	not available***
	D3-330P	Requires DCU*	OP-4CBL-2	not available***
	D3-340	Top port	OP-3CBL	OP-3CBL-1
		Bottom port	OP-3CBL	OP-3CBL-1
	D3-350	Top port	OP-2CBL	OP-2CBL-2
		Bottom port	OP-4CBL-2	not available***
DirectLOGIC™ DL405	D4-430	Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2	not available***
	D4-440	Top port	OP-4CBL-1	OP-4CBL-3
		Bottom port	OP-4CBL-2	not available***
	D4-450	Phone jack	OP-2CBL	OP-2CBL-2
		Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2	not available***
	D4-DCM (module)	Only one	OP-4CBL-2	not available***
GE® Series 1	IC610CPU105, 106	Requires DCU*	OP-4CBL-2	not available***
		Requires DCU*	OP-4CBL-2	not available***
GE® Series 90/30	All models (311-351)	RS422 serial port	not available***	not applicable
GE® Fanuc™ Series 90 Micro	All models	RS422 Serial port	not available***	not applicable
MODICON	ModBus	RJ45 port	OP-MCBL-1**	not applicable
TI305™/ SIMATIC® TI305™	325-07, PPX:325-07	Requires DCU*	OP-4CBL-2	not available***
	330-37, PPX:330-37	Requires DCU*	OP-4CBL-2	not available***
	325S-07 (or 325 w/Stage Kit)	Requires DCU*	OP-4CBL-2	not available***
	330S-37, PPX:330S-37	Requires DCU*	OP-4CBL-2	not available***
	335-37, PPX:335-37	Only one	OP-3CBL	OP-3CBL-1
		If DCU is used*	OP-4CBL-2	not available***
TI405™/ SIMATIC® TI405™	425-CPU, PPX:425-CPU	Only one	OP-4CBL-1	OP-4CBL-3
	430-CPU, PPX:430-CPU	Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2	not available***
	435-CPU, PPX:435-CPU	Top port (15-pin)	OP-4CBL-1	OP-4CBL-3
		Bottom port (25-pin)	OP-4CBL-2	not available***
Allen-Bradley™ SLC 500	5/03	Bottom port	OP-ACBL-1	OP-ACBL-3
	5/04	Bottom port	OP-ACBL-1	OP-ACBL-3
Allen-Bradley™	MicroLogix 1000/1200/1500	Only one	OP-ACBL-2	OP-ACBL-4

* Requires RS-232 Data Communications Unit (D3-232-DCU)

** 1000 series panels only

*** Cables for connecting to these ports must be built by the user. Pinout diagrams are in the OptiMate panel user manual or online.

DirectView 1000



DV-1000 <--->

4-line by 16-character backlit LCD display

Overview

The *DirectView* DV-1000 is a small, low-cost operator interface. The DV-1000 can be directly connected to DL05, DL06, DL105, DL205, D3-350 or DL405 CPUs. The DV-1000 is a "ladder logic dependent" terminal which relies entirely on PLC ladder logic to perform its functions. The DV-1000 does not require any configuration software. Instead, setup is performed through special reserved memory locations inside of the CPU. These special memory areas tell the DV-1000 which modes to use, and more importantly, where to get its display data. The following functions can be performed by the DV-1000:

View memory status: Display up to four variable address values at a time on a single screen.

View bit status: Display 32 bits (4 lines of 8 bits) or 64 bits (4 lines of 16 bits) at a time on a single screen. Bit data types can include I/O points, control relays, timer/counter and stage bits.

Change values of memory locations: Up to 16 different variable memory values can be changed (32 for DL405). Just move the cursor over the appropriate digit and press the increment (+)/decrement (-) keys.

Units per CPU: Only one DV-1000 per CPU.

Specifications	
Cable Required	DV-1000CBL or D4-1000CBL. See the following page
Max. Distance	15 feet from the CPU
Connector	Phone jack RJ12
Power Consumption	150mA @ 5VDC max (supplied by PLC communication port)
NEMA Rating	None
Agency Approval	UL, CUL, CE
Storage Temp	-4 to 158°F (-20 to 70°C)
Operating Temp	32 to 122°F (0 to 50°C)
Humidity	5-95% (non-condensing)
Vibration Resistance	MIL STD 810C Method 514.2
Shock Resistance	MIL STD 810C Method 516.2
Noise Immunity	NEMA (ICS3-304)
Atmosphere	No corrosive gases
Manufacturer	Koyo Electronics

Part Number	Price	Description
DV-1000	<--->	<i>DirectView</i> 1000 Timer/Counter access unit for <i>DirectLOGIC</i> PLCs
DV-1000CBL	<--->	Shielded cable to connect to <i>DirectLOGIC</i> PLCs, (RS-232C)
D4-1000CBL	<--->	Shielded cable to connect to 15-pin port on DL405 PLCs (RS232C)

Display user-defined messages, even with embedded V-memory values: Each line may contain a maximum of four embedded values. Messages are stored in CPU variable memory. Therefore, the number of messages is limited only by available CPU variable memory.

Display system-defined error messages and user-defined fault messages even in list format: Scroll through errors and messages. Error logs can even show time and date stamps on DL06 family, D2-240, D2-250-1, D2-260, D3-350, D4-440, D4-450 CPUs.

Is the DV-1000 right for you?

The DV-1000 is best suited for displaying information and occasionally changing setpoint parameters. To use the DV-1000 you should be very comfortable with ladder logic programming. If you're looking for an operator control panel, you should consider the **C-more** family of panels. They are better suited for applications that require operator interaction as a normal part of operation.

Which CPU is best to use with the DV-1000?

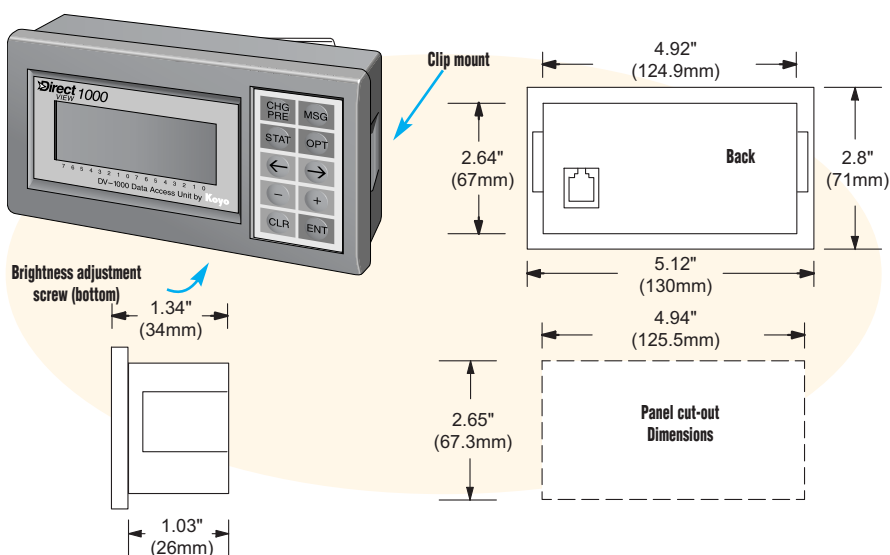
The DL05, DL105, DL06, D2-240, D2-250-1, D2-260, D3-350, D4-440, and D4-450 have ACON instructions that make the DV-1000 easier to work with. The DL105 and D2-230 have only one communication port, which can be a limitation in some cases. The DV-1000 does not work with D3-330 or D3-340 CPUs.

DV-1000 Dimensions and Installation

Installation

The DV-1000 is designed to snap into a rectangular cutout in a control panel or other surface panel. On each side of the housing there is a retention clip to keep the unit in place after installation. There are no provisions for mounting screws, so if your particular application is subject to high amounts of vibration, this may be a factor in your selection process. The drawing gives the physical dimensions of the DV-1000 housing.

The panel cut-out dimensions provide necessary clearance for the body of the unit and allow the outer housing bezel to cover the edges of the cut-out for a nice finished appearance. The optimum panel thickness for using the retention clips is 1/16" to 1/8".



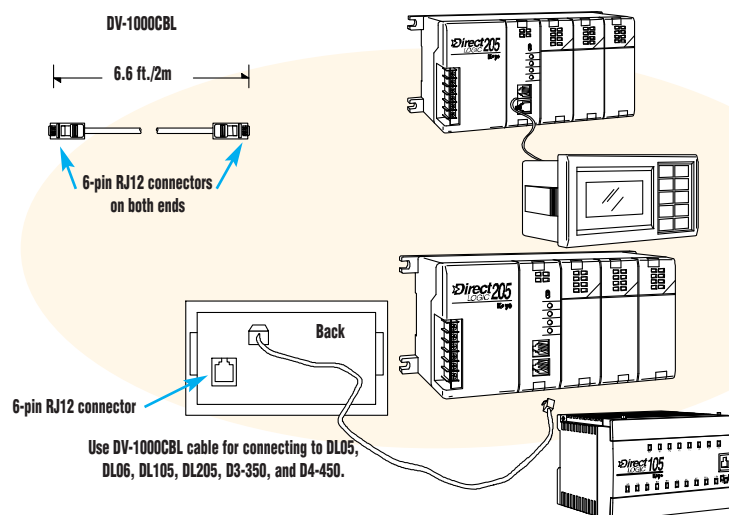
Cabling requirements

Since the DV-1000 only works with the DL05, DL06, DL105, DL205, D3-350 and DL405 CPUs, your cabling choices are fairly simple.

- **DV-1000CBL** — connects to DL05, DL06, DL105, DL205, D3-350 and D4-450 phone jack.
- **D4-1000CBL** — connects to all DL405 CPU 15-pin ports.

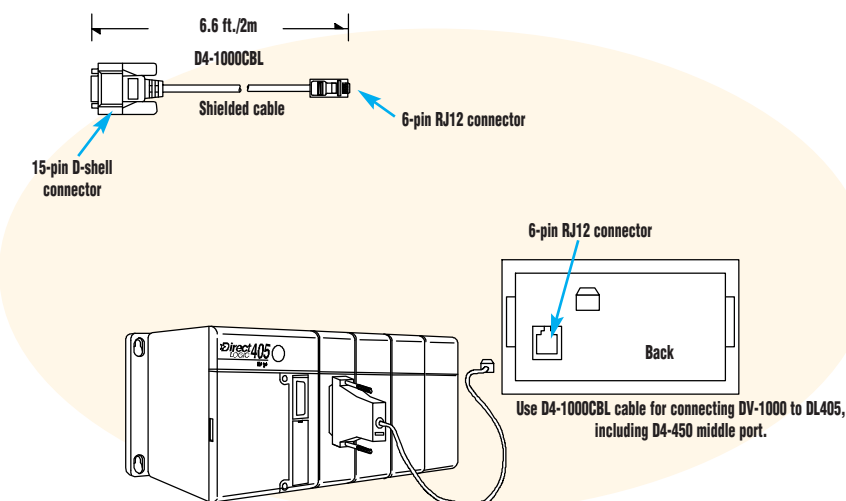
Maximum cable length of 15 feet between the DV-1000 and the PLC is recommended.

The DV-1000 can be connected to a DL205 or DL405 DCM, but you have to build your own cable.

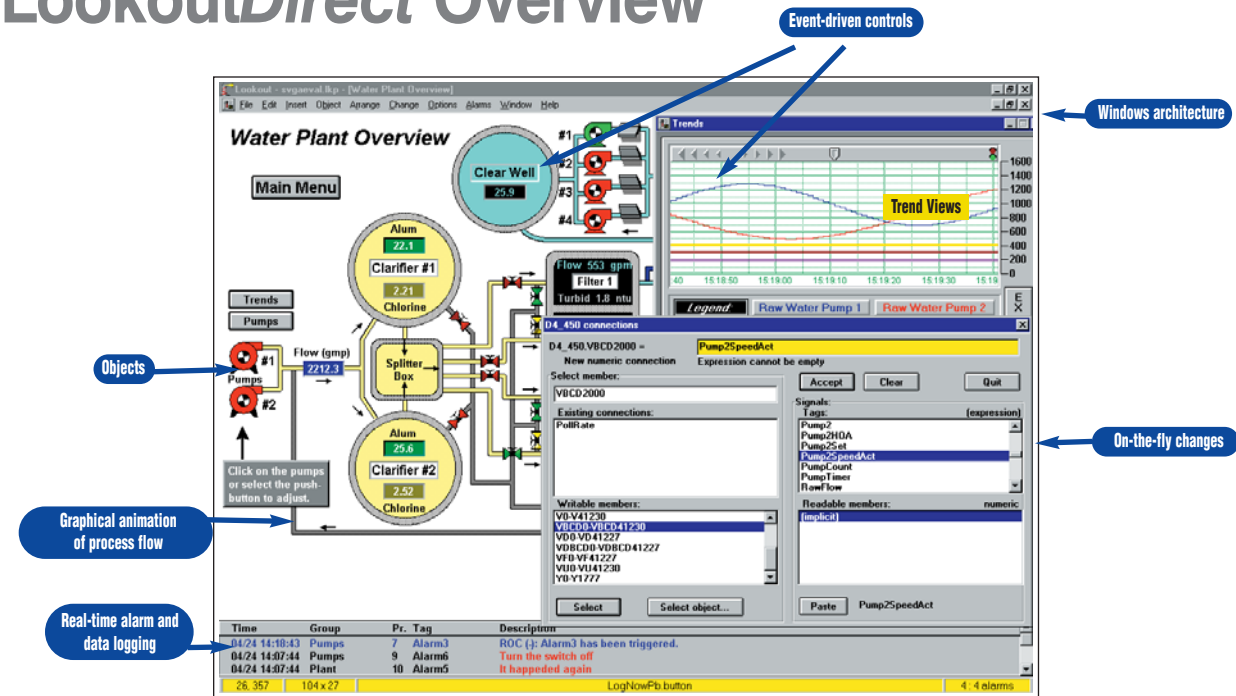


C-more Micro-Graphic

The new **C-more** Micro-Graphic Panels are a more enhanced small, low-cost graphic operator interface that you may want to consider when selecting a panel. The **C-more** Micro-Graphic panels are available in both a touch screen and non-touch version. The **C-more** panels will work with all **Direct**LOGIC PLCs and will also work with many different 3rd party PLCs.



LookoutDirect Overview



The “what you need” HMI

For those of you familiar with human machine interface (HMI) products, you might recognize the name Lookout[®].

Marketed by National Instruments, Lookout is one of the industry’s leading HMI products. We offer our own tailor-made version of the Lookout program, LookoutDirect.

LookoutDirect is a feature-packed 500- I/O version of the original package and includes drivers for the top 10 PLC/RTU products, plus our own DirectLOGIC driver.

LookoutDirect has an easy-to-use configuration package that requires no programming or scripting. Its object-oriented, event-driven architecture provides an outstanding graphical interface to your process. Users can easily create graphical representations of their devices and link those objects to their PLC system for real-time data acquisition, graphical animation, alarm generation, report printing, and network connection to your business system.

What is object-oriented?

LookoutDirect is fundamentally object-oriented. An object is a software model of something physical that is completely self-contained. There are many object classes, such as switches, trends, timers, drivers, etc. An object is simply an individual instance of an object class. For example, if you use 10 timers and 20 switches, you have selected only two different object classes, but a total of 30 objects. Objects have a predefined database, a set of parameters and built-in functionality. They encapsulate their data, parameters, and functionality into one bundle. Once you select the objects you need, simply connect them together as if you were physically hardwiring a control panel.

Not a programmer? Not a problem!

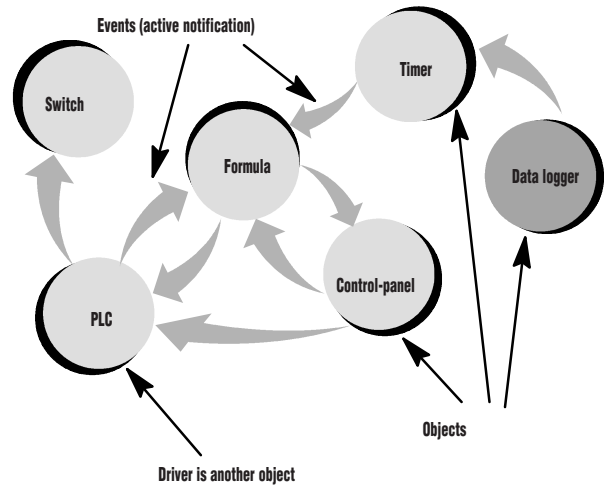
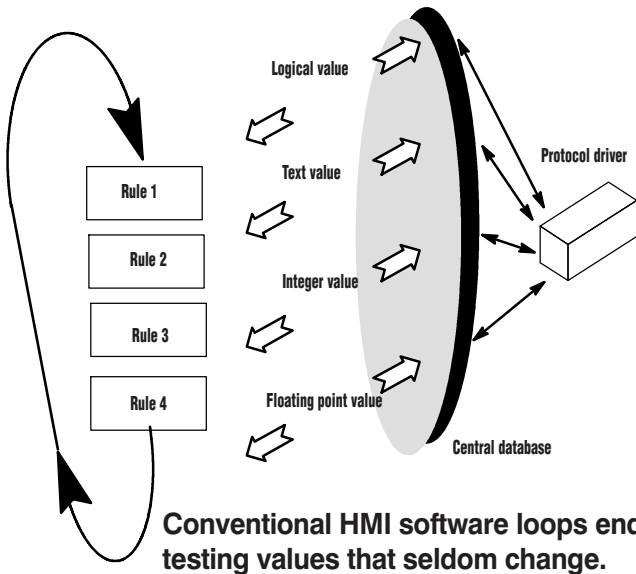
Developing an application in LookoutDirect only requires that you know how to find the letters on your keyboard and how to move and click your computer mouse. Select a data point and connect it to an object.

Debug online

Once you have installed your application on the plant floor, you can debug and modify it without irritating the operators. Since the process is online, even while you are editing, they won’t miss important data or alarms, and you won’t get kicked out of the control room! This feature alone can save a lot of time and agony.

Part Number	Price	Description
PC-LKD-DEV	<-->	LookoutDirect development package
PC-LKD-RTE	<-->	LookoutDirect runtime package
PC-LKD-DEVUPG	<-->	LookoutDirect development package upgrade
PC-LKD-RTEUPG	<-->	LookoutDirect runtime package upgrade
PC-DL-PLUS	<-->	DirectLOGIC Plus Driver Object for National Instruments Lookout Software. Allows for connection from Lookout to the DirectLOGIC line of PLCs

Event-Driven vs Loop-Driven



What is event-driven?

It is very important to understand that LookoutDirect is entirely event-driven, not loop-driven like many other industrial automation software products. The diagram above illustrates the big advantage of an event-driven application. Each object is totally independent, and remains in its current state until an event occurs. There is no waiting for the process to loop around to the top again before changing state or starting another process. However, with loop-driven software, as the loop database grows larger and larger, the response times get slower and slower. This wastes valuable time for you, your computer, and your process. This is commonly called a passive notification system.

In LookoutDirect, everything is event-driven – monitoring, data logging, alarming, and supervisory control. An event is triggered by changing a setpoint, turning on a switch, or activating a timer. When an event occurs, it sends a signal throughout the object network, changing only those objects related to that specific event. All non-related objects remain in their current state, using no processor time. Also, the objects themselves may generate a different event to start another process, creating a chain reaction but only affecting those objects in the chain. This event-driven approach gives LookoutDirect a dramatic speed advantage compared to loop-driven products. This can be referred to as an active notification system.

Event-driven vs. loop-driven

If an event-driven program is described as an active notification and a loop-driven program as passive notification, you can clearly get the idea that one is going to be more take-charge than the other. Would you rather the information get to you when you need it or as soon as it's ready, or do you want to constantly keep asking "Is it ready, is it ready?" To go a little further, imagine that you were expecting information from a lot of different sources. If you had to ask each one of them over and over for the information, not only would you waste valuable time, but also the time of the entire process. LookoutDirect uses event-driven architecture to avoid all of the wasted time polling or searching for information. Instead, it detects the arrival of the information.

LookoutDirect Features

Communications

LookoutDirect can communicate with various external physical devices such as PLCs, RTUs, controllers, etc. In addition to our DirectLOGIC PLCs and Ethernet connections, the following drivers are included:

- Allen-Bradley PLC5
- Allen-Bradley SLC500
- ASCII
- Delta-Tau (motion control)
- GE-Series 90
- Mitsubishi FX
- Modicon Modbus ASCII, Plus, RTU
- Omron
- OPC Client and Server
- TIWAY
- Field Point I/O

Networking

Browse and select networking makes connecting multiple LookoutDirect stations easy within a production facility or at remote locations. Click to select and connect to any other LookoutDirect PC in a TCP/IP based network, online and in real-time without shutting down your process. With the communications capabilities of Ethernet modules, virtually any number of users at any location can access the network. Not only will you be capable of sharing data across the network with other machines, but you will be able to link other Windows applications (via OPC) directly to LookoutDirect.

Data logging

Having complete historical records of your process is invaluable. LookoutDirect creates and maintains your process history automatically with a combination of various archiving mechanisms.

- **Distributed historical data logging** — allows LookoutDirect to save and retrieve data anywhere in a network
- **Spreadsheet logger** — creates standard ASCII that can be opened/edited with most spreadsheet and database programs.
- **Citadel threaded database logger** — creates a historical database that can be retrieved by the ODBC driver.
- **Event logger** — creates a chronological audit trail of “who did what and when”.

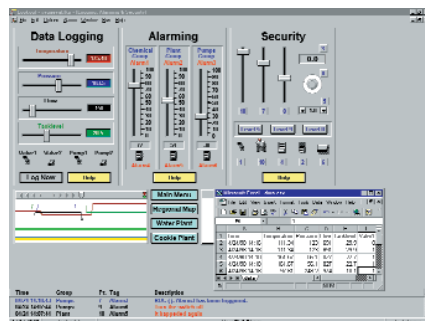
Trends

LookoutDirect combines historical and real-time data in a single seamless trend graphic called Hypertrend. You can easily scroll or jump to any specific time along the trend or you can use the pop-up window to search for peaks, valleys or specific values. The software is capable of recalling and displaying data at a rate of more than 25,000 values per second. This performance provides the information you need in real time.

Supervisory control

The control capabilities range from very simple to very complex. Using object classes and complex formulas, you can create a wide variety of control devices. The devices can be connected in almost any combination to handle almost any situation.

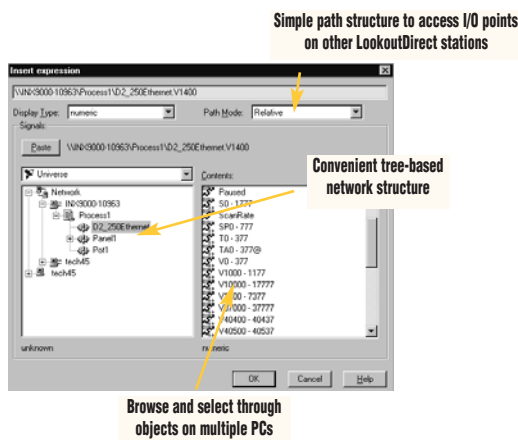
Alarming



LookoutDirect provides you with an alarm set that most other packages offer, plus more. It triggers alarms with an event or any combination of events you specify. Alarms can be as simple or as complex as needed. The alarming is so versatile that you can group your alarms in any manner, turn off any nuisance alarms, prioritize them, and acknowledge alarms and events from anywhere in the network.

Security

A well-designed security system prevents unauthorized access while remaining transparent to the user. LookoutDirect allows you to quickly log on to respond to any situation and keeps a permanent record of all actions while you are logged on.



Lookout*Direct* Features

Lookout <i>Direct</i> Features			
Alarms	<ul style="list-style-type: none"> Simple and complex alarm capabilities 10 priority levels and unlimited groups Unwanted/nuisance alarms filtered out Ability to acknowledge individually, by group, or priority Distributed alarming allows acknowledgement from any node on network Automatic report generation of alarm history Audio wave (.wav) files attached to alarms 	Recipe	<ul style="list-style-type: none"> Build recipes in Excel and import 255 ingredients and 1000 separate recipes per object Unlimited number of recipe objects; download new recipes on-line
Architecture	<ul style="list-style-type: none"> Unique object-oriented design makes Lookout<i>Direct</i> extremely easy to learn and use and provides you with dozens of prebuilt tools. Event-driven engine: it is a high performance system that can handle large projects with fast response time True on-line configuration: modify your application without shutting down the process 	Report Generation	<ul style="list-style-type: none"> Create reports on control panel and send to printer Launch third-party programs to generate complex reports Preconfigured alarm and event reports
Data Logging	<ul style="list-style-type: none"> Spreadsheet object creates standard ASCII text files in .csv format Simple or complex logging trigger mechanisms High-speed data logging with Citadel database Efficient data compression for minimal disk usage Filter signals to reduce unnecessary logging Event logging of setpoint adjustments and complex/custom events 	Security	<ul style="list-style-type: none"> 10 security levels with password protection Viewing security hides "sensitive" data Control security prevents low-level operators from adjusting setpoints Developer can "lock" executable to prevent unauthorized modifications System security "locks" and prevents access to other programs Action verification prompts you before making adjustments Event logger creates permanent audit trail
Expressions/ Formulas	<ul style="list-style-type: none"> Logical (Boolean) functions Lookup functions Mathematical functions Statistical functions Text functions Trigonometric functions Date/time functions 	Supervisory Control	<ul style="list-style-type: none"> Neutral zone (on/off control) Sequencing Timers (elapsed, delay on, delay off, pulse, one shot, interval, time of xxx, etc.) Complex functions (mathematical, Boolean, lookup, arithmetic, trigonometric, text, date/time)
Graphics	<ul style="list-style-type: none"> Ability to handle custom bitmaps and metafiles Extensive graphical library included Ability to import AutoCAD files as bitmaps or metafiles Complex animation in X, Y and Z axis Multi-state animation pumps, valves, motors and more Variable speed rotation Capable of Windows color depths and resolutions 	Telemetry	<ul style="list-style-type: none"> Radio with/without adjustable RTS/CTS timers Full duplex and half duplex Dial-up phone lines (Modbus RTU only) Leased phone lines Complex polling algorithms Multiple protocols over a single radio frequency or phone line Automatic data blocking
Networking	<ul style="list-style-type: none"> Browse and select networking View screens simultaneously on separate nodes Make setpoint adjustments from any node Acknowledge alarms from any node Configure specific nodes for monitoring only Configure peer-to-peer or client-server 	Trending	<ul style="list-style-type: none"> Integrated historical/real-time data in a single trend Forward/backward scroll bar built in High-speed access to historical data on hard drive Cursor bar gives precise values at intersections Ability to "jump" to specific point in time Pan and zoom
New Connection and Object Browser	<ul style="list-style-type: none"> View all object connections in a simple tree-based diagram Debug connections by using convenient right-click "follow connection" command Use drag-and-drop in creating objects for fast application development Make connections to other Lookout<i>Direct</i> stations across the network in real-time 	Windows Connectivity	<ul style="list-style-type: none"> 32-bit for Windows NT/98/2000/WIN ME/XP (NT, 2000 or XP Pro recommended) (Does not support Windows Vista.) OPC Client/ server capability for business system connectivity Use the open database connectivity (ODBC) driver to retrieve data from the Citadel database Use dynamic data exchange (DDE) to send/receive data to/from third-party software Use spreadsheet object to create ASCII text files

Direct LOGIC PLUS

Due to the popularity of our *Direct*LOGIC driver object and other features included in the Lookout*Direct* software package, we are pleased to offer *Direct*LOGIC PLUS for National Instruments Lookout.

Overview

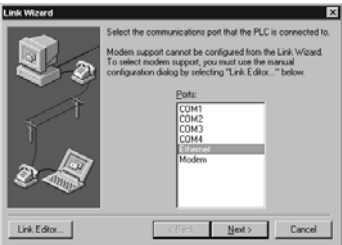
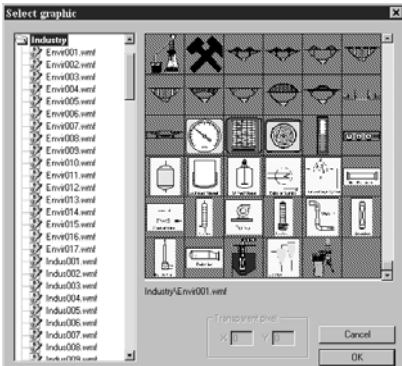
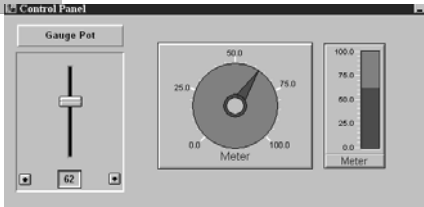
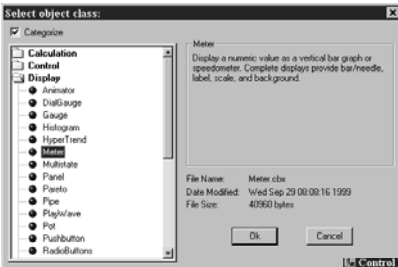
*Direct*LOGIC PLUS enables National Instruments Lookout users to add on the exclusive features of Lookout*Direct*. The main features included are:

- ***Direct*LOGIC Driver Object** — this enables users to connect to *Direct*LOGIC PLCs via Ethernet and serial using either K-sequence or *Direct*Net protocol.
- **Meter Object** — an easy-to-use and scalable dial gauge or bar graph type display for monitoring any numeric signal.
- **Over 300 graphics** — additional graphics install into the appropriately defined folders in a scalable .wmf format.

DirectLOGIC driver object features

The Driver Object is the biggest feature and the driving force behind this product. The Ethernet connection to ECOM modules that is included is the best feature because of the high speed and flexibility it provides your application.

- Allows for connection to DL05/06 DL205 and DL405 ECOMs
- Connection to DL105 and DL305 PLCs
- Capability of using *Direct*SOFT and Lookout simultaneously over the same cable (driver versions must match)
- Link Wizard automatically identifies CPU and configures your settings



Part Number	Price	Description
PC-DL-PLUS	<--->	<i>Direct</i> LOGIC PLUS Driver Object for National Instruments Lookout Software. Allows for connection from Lookout to the <i>Direct</i> LOGIC line of PLCs

LookoutDirect System Requirements



One of the nice things about LookoutDirect software is that it can easily run on industrial PCs or inexpensive, off-the-shelf PCs. The software comes on CD-ROM so your development system PC will need a CD-ROM drive. Run-time systems do not require a CD-ROM drive, but if they don't have one they will need a network connection to load the run-time engine and application.

System requirements

- Windows 98/2000, XP-compatible (2000 or XP Pro recommended) (Does not support Windows Vista.)

Minimum:

Pentium/Celeron 233 Mhz
32MB RAM

Recommended:

- Pentium/Celeron 333 Mhz
- 64 MB RAM or greater
- 50 MB available hard drive disk space
- CD-ROM drive
- Color monitor, with at least 640x480 resolution
- USB port

Ordering the software

Development package — includes one Development Environment license, one Run-time Engine license, one key that supports development or runtime, and all drivers.

Run-time package — includes one run-time engine license, one run-time key, and all drivers.

You need to purchase one Development Package for each PC used for application development.

If the PC used in your run-time application is not your development PC, you also need to purchase a Runtime Package for the HMI PC.

Hardware key — The hardware key must be connected to a USB port for the software to run.

Defining the software pieces

Development environment — is used to develop and debug the control application program (like **DirectSOFT** in the case of PLCs). You can use the Development Software on one PC to create many different projects which can run on many Runtime Engines.

Run-time engine — is like the firmware in the CPU of a PLC. This software will run the application for your process.

Part Number	Price	Description
PC-LKD-DEV	<--->	LookoutDirect Development package
PC-LKD-RTE	<--->	LookoutDirect Runtime package
PC-LKD-DEVUPG (See description below)	<--->	LookoutDirect Development package upgrade
PC-LKD-RTEUPG (See description below)	<--->	LookoutDirect Runtime package upgrade
PC-DL-PLUS	<--->	DirectLOGIC Plus Driver Object for National Instruments Lookout Software. Allows for connection from Lookout to the DirectLOGIC line of PLCs

PC-LKD-DEVUPG — LookoutDirect Version 4.5 Development Package upgrade. Upgrade development package for any LookoutDirect 3.8.x to Version 4.51 or higher. Includes software on CD-ROM and manual.

PC-LKD-RTEUPG — LookoutDirect Version 4.5 Runtime Package upgrade. Upgrade runtime package for any LookoutDirect 3.8.x to Version 4.5 or higher. Includes software on CD-ROM and manual.

ATLAS™ Industrial Grade LCD Monitors



New Product!



**UL Approved for
Class I Division 2
Hazardous Locations**

Integrated Power Supply



Features

- Optional non-touch or 5-wire analog resistive touch screen available
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G
- NEMA 4/4X/12 front bezel
- RoHS compliant
- Integral 100-240 VAC power supply
- RS-232 and USB support for touch screen models
- Simplified installation with no studs
- VESA compliant - all modes up to SXGA, 16 million colors
- 2-year warranty

Introducing AutomationDirect's ATLAS family

These new heavy duty PC monitors offer superb quality at a competitive price. Their compact size and very thin panel mounted depth (less than 2.75") allows them to be used in size restricted projects. And the class I, Div 2 listing makes them ideal for installation in harsh environments found in many factory automation applications. All sizes are available in non-touch or with a 5-wire analog resistive touchscreens. There are currently three sizes, 15", 17", and 19", in this series.

The ATLAS series includes 15" XGA, 17" SXGA, and 19" SXGA LCD monitors. All models come standard with 100-240 VAC input power supplies and have NEMA 4/4X/12 panel-mountable front bezels. All units provide Analog Video (VGA) connections, and 5-wire analog resistive touchscreen "T" models supply connection via either USB or RS-232. The ATM1700 and ATM1900 include Digital Video Inputs (DVI) as well. The entire series is UL/cUL listed, complies with European CE and RoHS requirements, and is UL approved for Class I and II, Division 2 hazardous locations.

ATM1500



ATM1500T (touch)



ATM1500 - 15"

- 15" color TFT LCD display
- XGA, 1024 x 768 native resolution
- 16 million colors
- 40,000 hrs backlight life
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.4" behind bezel
- Accepts analog 15-pin video input

ATM1700



ATM1700T (touch)



ATM1700 - 17"

- 17" color TFT LCD display
- SXGA, 1280 x 1024 native resolution
- 16 million colors
- 50,000 hrs backlight life
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.6" behind bezel
- (DVI) Digital Video Inputs
- Accepts analog 15-pin video input

ATM1900



ATM1900T (touch)



ATM1900 - 19"

- 19" color TFT LCD display
- SXGA, 1280 x 1024 native resolution
- 16 million colors
- 40,000 hrs backlight life
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.7" behind bezel
- (DVI) Digital Video Inputs
- Accepts analog 15-pin video input

Quality Industrial Monitors at a Great Price!



15" ATLAS

<--->
ATM1500

<--->
ATM1500T

17" ATLAS

<--->
ATM1700

<--->
ATM1700T

19" ATLAS

<--->
ATM1900

<--->
ATM1900T

*"T" models
have resistive
touchscreens*

New Product!

UL, cUL, CE approved
NEMA 4/4X/12, IP65
FCC 47 CFR, Part 15,
Class A Bezel
Construction

Bezel Construction:
0.25" Machined Aluminum with a recessed
gasket pocket to keep moisture out and
powder coated treated with an attractive
dark gray textured powder coating

Impact Window:
.125" Lexan (Polycarbonate)
with a clear hard coat

FRONT

TFT Active Matrix
with auto-scaling,
auto-adjusting
(VESA compliant - all
modes up to SXGA).
Up to 1280 x 1024
native resolution.

5 wire analog resis-
tive touch-screen
(xxxx T part #):
Allows fine-featured
touch control; works
with gloved hands and
is durable and reliable
in industrial
environments.

ELO provided
drivers for Windows
VISTA, WinXP,
Win2000, WinNT,
Win98, Win95
and DOS.
**Software works
on USB 2.0 and
serial RS-232.**

Simplified installation with no studs,
housed in a heavy duty steel chassis with a
powder coated machined aluminum bezel
(mounting clips included)

Screen setup
via rear keypad
prevents tampering

"Auto-adjust" button on
back panel keypad for
easy display optimization

Ventilation located
on all sides to
reduce heat build-
up 0 to 50 °C (32 to
122 °F)

VESA Ready
VESA arm mount
ready (100mm)

The **16-gauge RoHS compliant CRS steel chassis**
provides corrosion resistance and extra strength.

**UL Approved for
Class I Division 2
Hazardous Locations**
Integrated Power Supply

Built in Power Supply 100- 240
VAC, 50/60 Hz simplifies and
reduces installation cost.

**USB Cable
Bracket** keeps
the USB cable
from loosening
(included with
monitor)

SIDE

Compact size and very
thin panel mount depth
of less than 2.75" saves
enclosure space

**Recessed cable
connections** conserve
panel space

CONNECTIONS

BACK

DVI
On 17" and
19" monitors
only

VGA

RS-232
Touch models
only

USB
Touch models
only

Full selection of cables in
various lengths is located
on page 12-25

For detailed specifications, refer to the Specification Charts in the ATLAS Technical section of the Catalog



Industrial Flat Panel PC Monitors

LCD Monitor Specifications

LCD Monitor Specifications						
Part Numbers	ATM1500	ATM1500T	ATM1700	ATM1700T	ATM1900	ATM1900T
Nominal Size	15”		17”		19”	
Price	<--->	<--->	<--->	<--->	<--->	<--->
DISPLAY						
Display Type	TFT Active Matrix					
Display Diagonal Size	14.96”		17.04”		18.97”	
Display Size (Active Area H x W)	8.98" x 11.97"		10.64" x 13.30"		11.85" x 14.82"	
Native Resolution	XGA, 1024 x 768		SXGA, 1280 x 1024			
VESA Modes Supported	Up to 1280 x 1024 @75Hz					
Displayable Colors	16M					
Brightness, Typical	250 Nit				270 Nit	
Contrast Ratio, Typical	550:1		600:1		800:1	
Horizontal/Vertical View Angle, CR>5, Typical	160 /140		160 /160		178 /178	
Backlight Life	40,000 hrs, Minimum		50,000 hrs, Minimum		40,000 hrs, Minimum	
Display Input Signal	Analog 15-Pin D-Sub		Analog 15-Pin D-Sub, DVI-D			
Impact Window	0.125" Lexan (polycarbonate), clear hard coat					
PHYSICAL						
Overall Monitor Dimensions (H x W x D)	12.80" x 15.80" x 2.65"		14.48" x 17.14" x 2.85"		15.7" x 18.66" x 2.95"	
Cutout Dimensions (H x W)	12.00" x 15.00"		13.70" x 16.35"		14.90" x 17.75"	
Chassis Depth	2.4"		2.6"		2.7"	
Bezel Construction	0.25" Machined Aluminum with recessed gasket pocket					
Bezel Finish	Dark Gray Textured Powder Coated					
Chassis Construction	16 Gauge RoHS Compliant CRS Steel					
Weight	12.5 lbs		17.5 lbs		21 lbs	
Shipping Weight	15 lbs		22 lbs		26 lbs	
ELECTRICAL						
AC Input Voltage	100 - 240 VAC, 50/60 Hz					
AC Input Current	0.5A Maximum		1A Maximum			
Input Power	20W		30W		35 W	
ENVIRONMENTAL						
Operating Temperature	0 to 50 °C (32 to 122 °F)					
Storage Temperature	-20 to 60 °C (-4 to 140 °F)					
Operating Humidity	20% to 80% RH, noncondensing					
Storage Humidity	10% to 90% RH, noncondensing					
Operating Shock	15g peak acceleration, 11msec					
Operating Vibration 5-2000 Hz	0.006" peak to peak, 1g max					
Operating Altitude	Sea level - 10,000 feet					
AGENCY						
Front Panel NEMA Rating	NEMA 4/4X/12, IP65					
FCC	47 CFR, Part 15, Class A					
EU CE Marking Compliance	CE, EN 55022: Class A, EN 61000-3-2: Class A, EN 61000-3-3, EN 61000-6-2, IEC 60950-1					
Safety Agency Approvals	UL 508 Listed (file #E191072), UL 1604 Listed* (file #E313546), cUL Listed CSA C22.2, #142, CSA C22.2, #143*					
* Class I Division 2, Groups A, B, C, D; Class II, Division 2, Groups F and G						



Company
Info.

PLCs

Field I/O

Software

C-more &
other HMI

AC Drives

AC Motors

Power
Transmiss.

Steppers/
Servos

Motor
Controls

Proximity
Sensors

Photo
Sensors

Limit
Switches

Encoders

Current
Sensors

Pressure
Sensors

Temp.
Sensors

Pushbuttons/
Lights

Process

Relays/
Timers

Comm.

Terminal
Blocks &
Wiring

Power

Circuit
Protection

Enclosures

Tools

Appendix

Part Index

Industrial Flat Panel PC Monitors

LCD Monitor Specifications (cont'd)

Touch Screen Specifications			
Part Numbers	ATM1500T	ATM1700T	ATM1900T
TOUCH SCREEN (Optional)			
Touch Screen Technology	5- Wire Analog Resistive		
Interface	USB 1.1 and Serial RS-232		
Resolution	4096 x 4096		
Positional Accuracy (Maximum Error)	0.18"		0.19"
Positional Accuracy (Standard Deviation of Error)	<0.08"		
Screen Finish	Anti-Reflective, Surface Durability - 3H per ASTM D3363		
Chemical Resistance	Acetone, Methylene Chloride, MEK, Isopropyl Alcohol, Hexane, Turpentine, Mineral Spirits, Unleaded gasoline, Diesel fuel, Motor oil, Transmission fluid, Antifreeze, vinegar, ammonia-based glass cleaner.		
Electrostatic Protection	Per EN 61000-4-2, 1995, Withstands 20 discharges up to 15 kV		
Expected Life	>35,000,000 Activations		

Supported PC Video Modes

Video Modes						
Mode	Dot Clock (MHz)	Horizontal Freq (KHz)	Vertical Freq (Hz)	H Sync Polarity	V Sync Polarity	Display Modes for Best Image Quality
640 x 350 @ 70Hz	25.144	31.430	70.000	P	N	
640 x 400 @ 70Hz	28.287	31.430	70.000	N	P	
720 x 400 @ 70Hz	28.287	31.430	70.000	N	P	
640 x 480 @ 60Hz	25.175	31.469	59.940	N	N	
640 x 480 @ 72Hz	31.500	37.861	59.940	N	N	
640 x 480 @ 75Hz	31.500	37.500	75.000	N	N	
800 x 600 @ 56Hz	36.000	35.156	56.250	P	P	
800 x 600 @ 60Hz	40.000	37.879	60.317	P	P	
800 x 600 @ 72Hz	50.000	48.077	72.188	P	P	
800 x 600 @ 75Hz	49.500	46.875	75.000	P	P	
1024 x 768 @ 60Hz	65.000	48.363	60.005	N	N	ATM1500/ATM1500T
1024 x 768 @ 70Hz	75.000	56.476	70.070	N	P	ATM1500/ATM1500T
1024 x 768 @ 75Hz	78.750	60.023	75.030	P	P	ATM1500/ATM1500T
1280 x 1024 @ 60Hz	108.000	63.981	60.020	P	P	ATM1700/ATM1700T & ATM1900/ATM1900T
1280 x 1024 @ 75Hz	135.000	79.976	75.035	P	P	ATM1700/ATM1700T & ATM1900/ATM1900T



Industrial Flat Panel PC Monitors

ATM1500/ATM1500T

The **Atlas** ATM1500/ATM1500T is a high performance 15" color TFT flat panel monitor specifically designed for harsh industrial environments including Class I & II, Division 2 Hazardous Locations. The ATM1500/ATM1500T accepts standard analog VGA input and can display all VESA video modes up to 1280 x 1024 at 75Hz with 16 million colors. An optional 5-wire analog touch screen (ATM1500T) is available that offers both RS-232 and USB interface capability. The monitor is housed in a heavy duty steel chassis with a powder coated machined aluminum bezel. The monitor is certified to NEMA 4/4X/12 standards, is UL/CUL listed, meets CE requirements and is RoHS compliant. Panel mounting is simplified using convenient mounting clips instead of conventional studs. All monitors are shipped with a power input wiring receptacle, 6' VGA cable, 6' RS-232 cable (ATM1500T only), 2m USB Cable (ATM1500T only), mounting hardware, Quick Installation Guide, and CD-ROM containing Hardware User's Guide (ATM-15-USER) and touch screen driver software for Windows 98/NT/2000/XP/Vista.



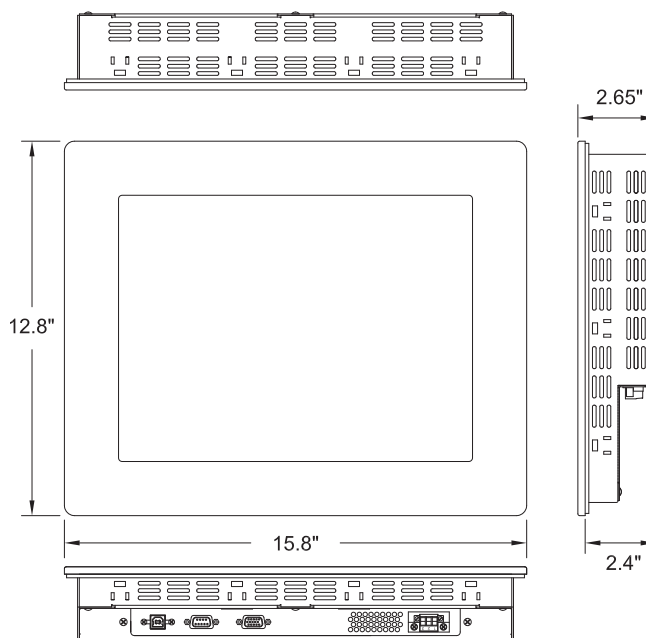
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Specifications

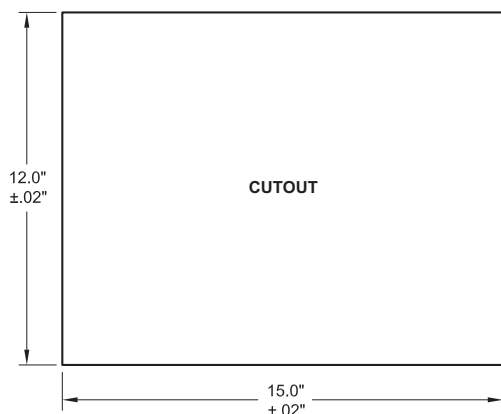
- 15" color TFT LCD display
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G
- NEMA 4/4X/12 front bezel
- 2-year warranty
- RoHS compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.4" behind bezel
- Accepts analog 15-pin video input
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with both RS-232 and USB interface

Dimensions

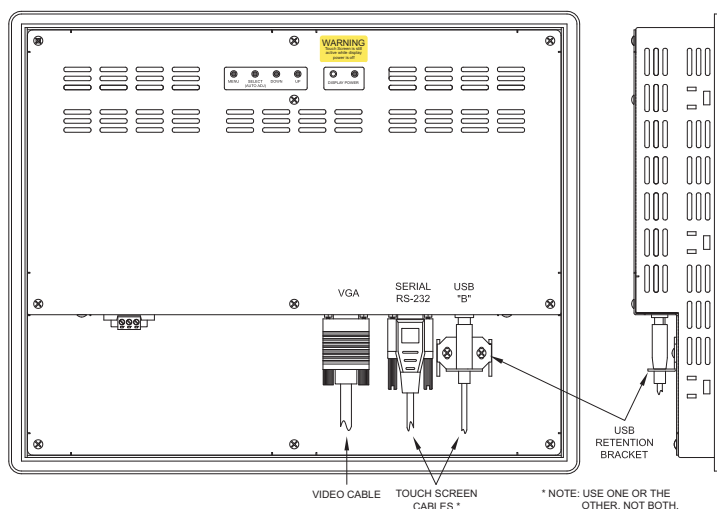


NOTE: Don't forget the optional cables shown in the accessories.

Mounting Cutout



Cable Connections





Industrial Flat Panel PC Monitors

ATM1700/ATM1700T

The **Atlas** ATM1700/ATM1700T is a high performance 17" color TFT flat panel monitor specifically designed for harsh industrial environments including Class I & II, Division 2 Hazardous Locations. The ATM1700/ATM1700T accepts standard analog VGA input, or digital DVI input, and can display all VESA video modes up to 1280 x 1024 at 75Hz with 16 million colors. An optional 5-wire analog touch screen (ATM1700T) is available that offers both RS-232 and USB interface capability. The monitor is housed in a heavy duty steel chassis with a powder coated machined aluminum bezel. The monitor is certified to NEMA 4/4X/12 standards, is UL/CUL listed, meets CE requirements and is RoHS compliant. Panel mounting is simplified using convenient mounting clips instead of conventional studs. All monitors are shipped with a power input wiring receptacle, 6' VGA cable, 6' RS-232 cable (ATM1700T only), 2m USB Cable (ATM1700T only), mounting hardware, Quick Installation Guide, and CD-ROM containing Hardware User's Guide (ATM-17-USER) and touch screen driver software for Windows 98/NT/2000/XP/Vista



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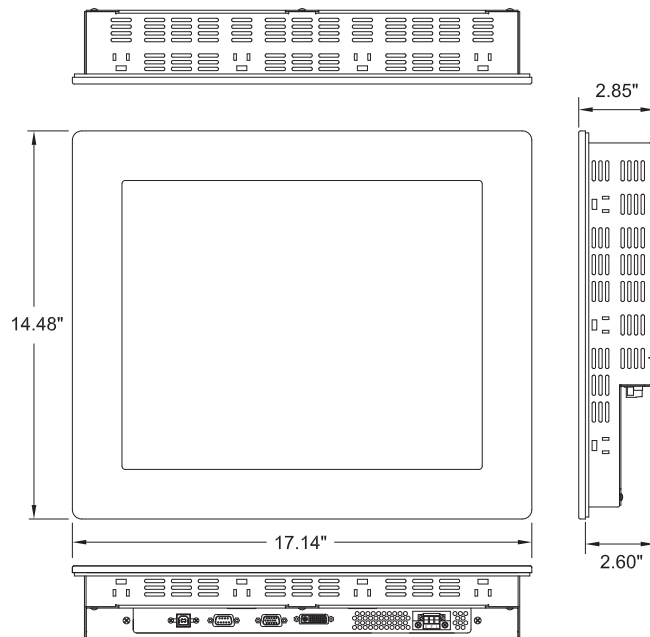
Specifications

- 17" color TFT LCD display
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G
- NEMA 4/4X/12 front bezel
- 2-year warranty
- RoHS compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.6" behind bezel
- Accepts analog 15-pin video input, DVI-D
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with both RS-232 and USB interface

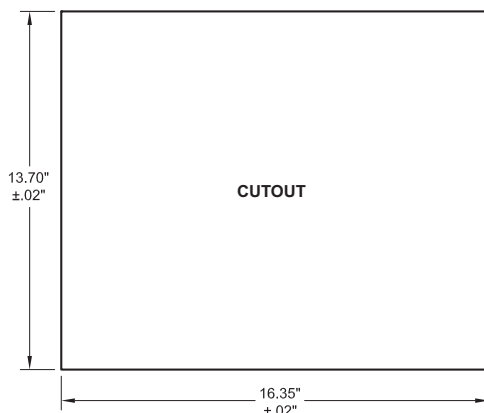


NOTE: Don't forget the optional cables shown in the accessories.

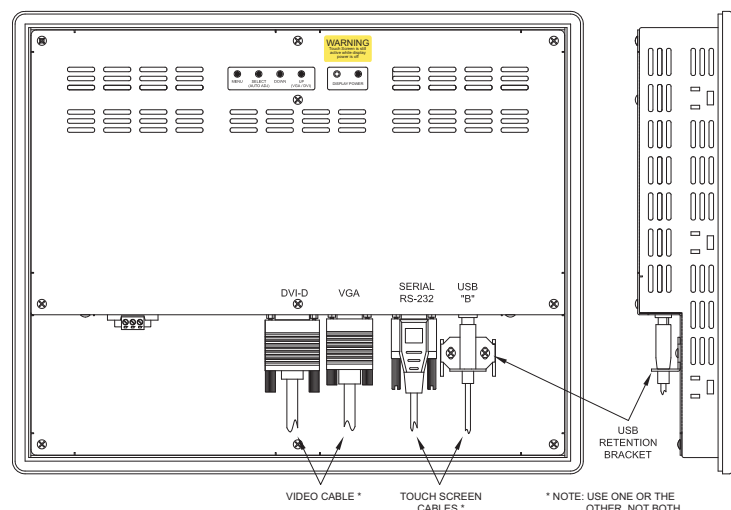
Dimensions



Mounting Cutout



Cable Connections





Industrial Flat Panel PC Monitors

ATM1900/ATM1900T

The **Atlas** ATM1900/ATM1900T is a high performance 19" color TFT flat panel monitor specifically designed for harsh industrial environments including Class I & II, Division 2 Hazardous Locations. The ATM1900/ATM1900T accepts standard analog VGA input, or digital DVI input, and can display all VESA video modes up to 1280 x 1024 at 75Hz with 16 million colors. An optional 5-wire analog touch screen (ATM1900T) is available that offers both RS-232 and USB interface capability. The monitor is housed in a heavy duty steel chassis with a powder coated machined aluminum bezel. The monitor is certified to NEMA 4/4X/12 standards, is UL/CUL listed, meets CE requirements and is RoHS compliant. Panel mounting is simplified using convenient mounting clips instead of conventional studs. All monitors are shipped with a power input wiring receptacle, 6' VGA cable, 6' RS-232 cable (ATM1900T only), 2m USB Cable (ATM1900T only), mounting hardware, Quick Installation Guide, and CD-ROM containing Hardware User's Guide (ATM-19-USER) and touch screen driver software for Windows 98/NT/2000/XP/Vista.



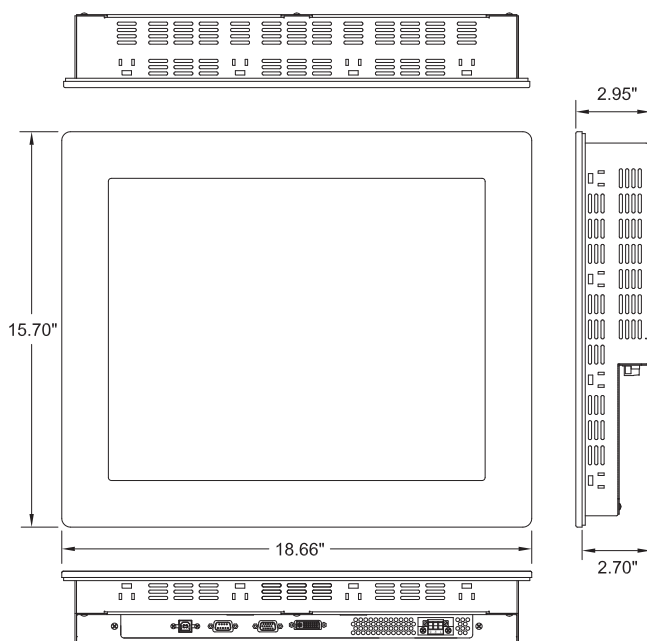
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Specifications

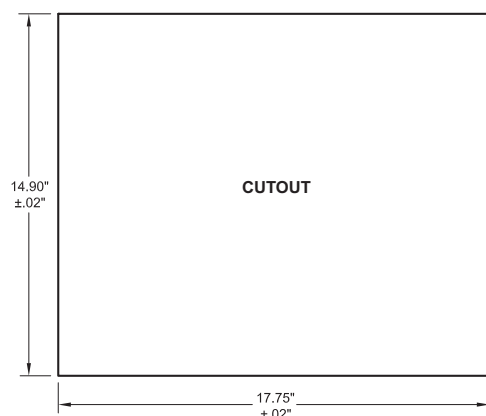
- 19" color TFT LCD display
- UL 508 and UL 1604 listed for Hazardous Locations: Class I, Division 2, Groups A, B, C, D and Class II, Division 2, Groups F and G
- NEMA 4/4X/12 front bezel
- 2-year warranty
- RoHS compliant
- Integral 100-240 VAC power supply
- Simplified installation with no studs
- Thin design - only 2.7" behind bezel
- Accepts analog 15-pin video input, DVI-D
- VESA compliant - all modes up to SXGA, 16 million colors
- Optional 5-wire resistive touch screen with both RS-232 and USB interface

Dimensions

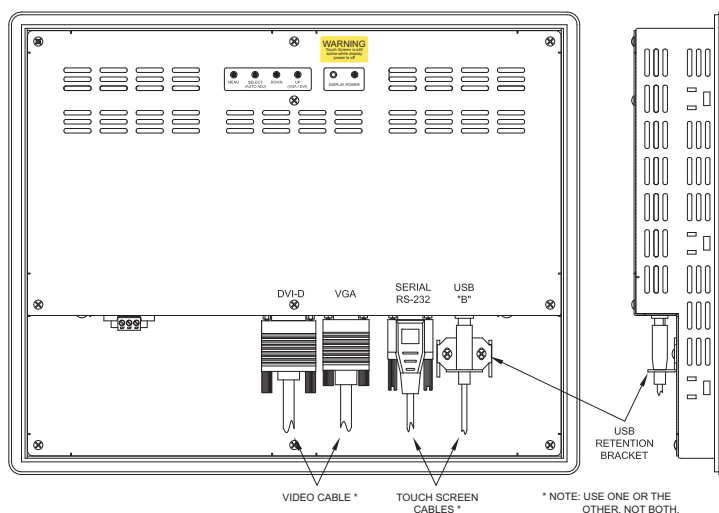


NOTE: Don't forget the optional cables shown in the accessories.

Mounting Cutout



Cable Connections



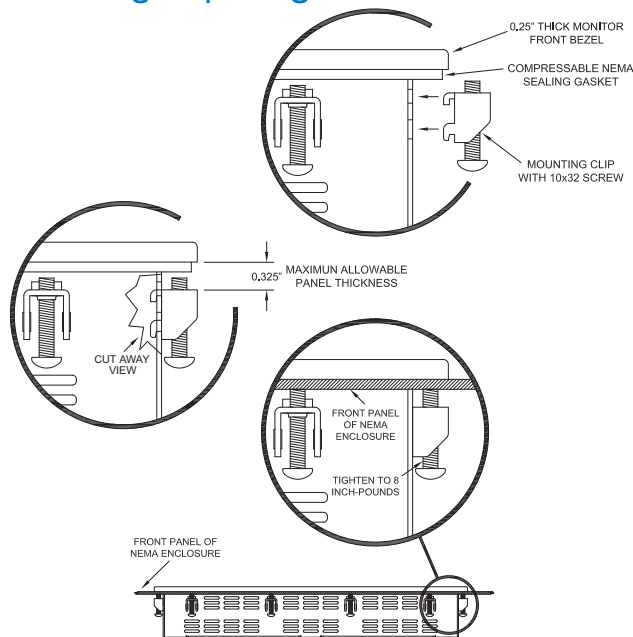
* NOTE: USE ONE OR THE OTHER, NOT BOTH.

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Mounting Clip Installation

To install the monitor, make a cutout (according to the cutout diagram for the respective monitor) through one of the walls of your NEMA enclosure. Next, hold the monitor in place and install the mounting clips. The monitor uses "U"-shaped clips and a special gasket to achieve a proper seal. Tighten the clips to the point where the back of the monitor's bezel just begins to contact the front of the NEMA enclosure. The use of an adjustable torque driver is recommended. The screws should be tightened to 8 inch-pounds. Tighten the clips in a cross pattern to develop an even pressure on the sealing gasket. **DO NOT OVERTIGHTEN AS DAMAGE CAN RESULT, CAUSING LOSS OF SEALING INTEGRITY.**

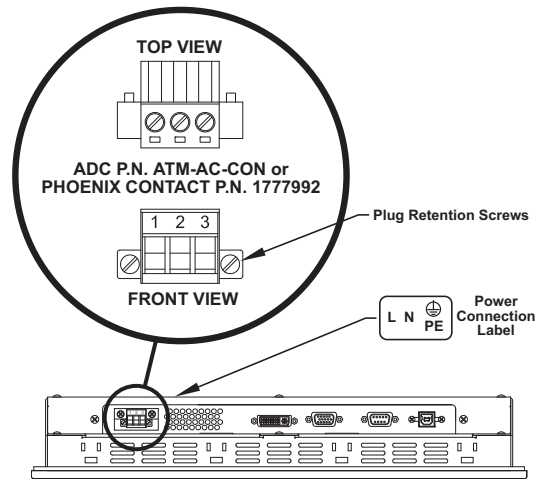
Mounting Clip Diagram



Connecting Power

The monitor is powered from 100-240 VAC, 50/60 Hz. Power is connected to the monitor through a removable Phoenix Contact plug (ADC P.N. ATM-AC-CON or Phoenix Contact P.N. 1777992) that allows for screw termination of field wiring. The use of 18 AWG or greater (12 AWG maximum wire) is recommended. Connect the field wiring according to the appropriate table below. After the connections are made, make sure the power connection screws (the two screws shown in the "Front View" below) are securely tightened. This will prevent the plug from pulling out.

Power Wiring Diagram

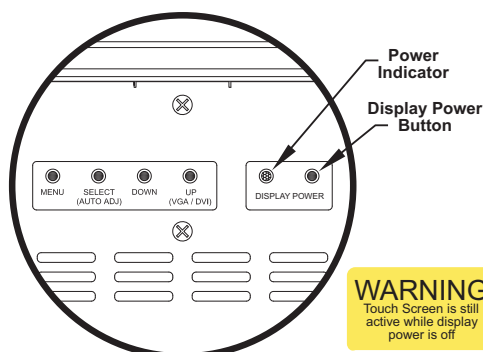


100 VAC - 240 VAC INPUT (1.0 Amps Min)		
	PIN No.	Definition
1	1	AC Line Input
2	2	AC Neutral Return
3	3	Protective Earth Ground

Setting the On Screen Display (OSD) Controls

The On Screen Display (OSD) controls are used for making adjustments to the monitor's settings and are located on the back of the monitor. They consist of a single LED and five pushbuttons (functions are described in Chapter 3 of the respective monitor's Hardware User's Guide) located on the Documentation and Driver CD, or downloadable from the Online Documentation area of the *AutomationDirect* Web site.

OSD Controls



OSD Main Menu Display

MAIN MENU	
BRIGHTNESS/CONTRAST	
COLOR	
POSITION	
SETUP	
EXIT	
1280 X 1024	63.9 KHZ / 60 HZ



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Accessories & Replacement Parts

Part Number	Description	Price
ATM-CBL-VGA10	10 ft. 15-pin coaxial VGA cable. Connects any Atlas monitor to a standard VGA card.	<--->
ATM-CBL-VGA25	25 ft. 15-pin coaxial VGA cable. Connects any Atlas monitor to a standard VGA card.	<--->
ATM-CBL-VGA50	50 ft. 15-pin coaxial VGA cable. Connects any Atlas monitor to a standard VGA card.	<--->
ATM-CBL-DV2M	6 ft. (2 meter) DVI (type D) video cable. Connects M1700 and M1900 to a standard DVI-D port. DVI cables provide a higher bandwidth video interface than the VGA cables.	<--->
ATM-CBL-DV3M	10 ft. (3 meter) DVI (type D) video cable. Connects M1700 and M1900 to a standard DVI-D port. DVI cables provide a higher bandwidth video interface than the VGA cables.	<--->
ATM-CBL-10	10 ft. serial communication cable. Connects Atlas monitor to std. 9-pin RS-232 port.	<--->
ATM-CBL-25	25 ft. serial communication cable. Connects Atlas monitor to std. 9-pin RS-232 port.	<--->
ATM-CBL-50	50 ft. serial communication cable. Connects Atlas monitor to std. 9-pin RS-232 port.	<--->
USB-CBL-AB3	3-ft (0.9 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
USB-CBL-AB6	6-ft (1.8 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
USB-CBL-AB10	10-ft (3 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
USB-CBL-AB15	15-ft (4.6 meter) Standard USB 2.0 cable with Standard-A plug to Standard-B plug. Suitable for all USB devices.	<--->
ATM-AC-CON	Replacement Power Wiring Connector for AC Powered Units.	<--->
ATM-CLIP	Replacement flat panel mounting clip kit. Package of 16 clips and screws.	<--->

USB-CBL-AB3



USB-CBL-AB6



USB-CBL-AB10



USB-CBL-AB15



ATM-CBL-VGA10



ATM-CBL-VGA25



ATM-CBL-VGA50



ATM-CBL-DV2M



ATM-AC-CON



ATM-CBL-DV3M



ATM-CBL-10



ATM-CLIP



ATM-CBL-25



ATM-CBL-50

